the genus Pleurosorus, which is found as three scarcely differing forms in Southern Spain (*P. Pozoi*), South Chile (*S. papaverifolius*), and Australia (*P. rutaefolius*). These small xerophytic rock ferns may well be cited as examples of the simultaneous appearance of a species in widely separated localities.

There is but one fault to find with this otherwise excellent book, and that is that the illustrations, most of which are very good, have been inserted without any particular reference to the text, and some difficulty is experienced in attempting to find the figures which are intended to illustrate particular descriptions.

A. W. H.

OPHTHALMIC THERAPEUTICS.

An International System of Ophthalmic Practice. Edited by Dr. Walter L. Pyle. Therapeutics. By Dr. A. Darier. Translated by S. Stephenson. Pp. xiv+444. (London: Rebman, Ltd., 1911.) Price 17*s.* 6*d.* net.

THIS is the first volume of an "International System of Ophthalmic Practice," edited by Dr. Walter L. Pyle, of Philadelphia. Other volumes announced are on "Medical Ophthalmology," by Dr. Arnold Knapp, of New York; "Ophthalmic Diagnosis," by Dr. Charles H. Beard, of Chicago; "Pathology and Bacteriology of the Eye," by Messrs. Treacher Collins and M. S. Mayou, of London; "Affections of the Orbit and Accessory Cavities," by Dr. Christian R. Holmes, of Cincinnati; "Examination and Refraction of the Eye and Eye-strain," by the editor; and "Ophthalmic Surgery," the authorship of which is not stated. It will be seen that the scheme is comprehensive, and that the aim is essentially practical. The authors are men of established reputation, and may be relied upon to carry out their work ably, so that the system will form a valuable, if not indispensable, addition to the ophthalmologist's library. If the volumes reach the standard of the sample which we have before us we may confidently prophesy the financial success of the series.

Those who have read Dr. Darier's lectures and papers on ophthalmic therapeutics in their original form in French must have approached the present work with some misgivings. Dr. Darier is an enthusiast for *novae res.* He possesses in marked degree the mental agility of the Latin race, quick to appreciate new facts, eager to traverse new paths. True, he sometimes appears to the onlookers to skip rather than to run, but then he is an artist, and a savour of art is not without its uses in dealing with the science of medicine, a science which, though yet in its infancy, is called upon to perform the feats of mature development. Dr. Darier's enthusiasm often outruns discretion, but in this book it has been curbed by the "free editorial control" which has been exercised upon the manuscript. In the end we have a sound work on the treatment of diseases of the eye, which by virtue of the large space devoted to the discussion of new methods and new drugs, forms a useful adjunct to the formal text-book.

The subject is divided into two parts, general and special therapeutics. The first commences with a chapter on methods of diagnosis, devoted to such topics as serum diagnosis and the demonstration of spirochætes. Constitutional treatment is then dealt with, stress being laid upon the technique of hypodermic and intravenous medication and subconjunctival injections. The chapter on serum- and organotherapy will prove particularly useful to the ophthalmologist, who has perforce to obtain his knowledge of these matters second-hand. It might have been expanded with advantage, and a freer citation of original papers would have enhanced its value. The ophthalmologist cannot afford to ignore serum-therapy, which now has so large a place in medical treatment, but it is a two-edged weapon, and should be used with the utmost caution. Much space is devoted to photo-electro-, hydro-, mechano-therapy, X-rays, and radium; as a rule original papers are quoted, and the reader is left to draw his own conclusions. Of more value are the chapters on drugs—anæsthetics, analgesics, vaso-dilators, vaso-constrictors, mydriatics and cycloplegics, miotics and silver compounds; their virtues and vices and the modes of their application are quite well described.

In the section on special therapeutics, the diseases of the eye are dealt with seriatim in the manner of an ordinary text-book. Too little stress is laid upon old and well-tried methods, so that the reader is liable to obtain a wrong perspective. The book, however, is clearly intended for specialists who are capable of forming an independent opinion in these matters. It would be easy to criticise many of the statements, but those most open to attack are such as only time and extended experience can ultimately settle. They are topics of constant dispute in ophthalmic journals, where they can most suitably be ventilated. In discussing cataract, glaucoma, and so on reference has to be made to operative measures. It would have been better to have relegated these matters entirely to the volume on ophthalmic surgery, where they will doubtless be treated exhaustively. The cursory remarks are of little value; on the other hand, they do not occupy much space.

We can cordially recommend the book to the consideration of advanced students of ophthalmology, and they will be well advised to look out for the other volumes of the series.

PHARMACOGNOSY IN THE UNITED STATES.

A Text-book of Botany and Pharmacognosy, intended for the Use of Students of Pharmacy, as a Reference Book for Pharmacists, and as a Handbook for Food and Drug Analysts. By Prof. H. Kraemer. Fourth revised and enlarged edition. Pp. viii+888. (Philadelphia and London: J. B. Lippincott Co., n.d.) Price 15*s.* net.

ALTHOUGH in English text-books botany is not usually combined with pharmacognosy, it is undeniable that such a combination possesses for the student of the latter science the distinct advantage that much overlapping may be avoided, and that, by selecting medicinal plants to illustrate the botanical portion, the student, while studying botany, insensibly acquires a considerable amount of information con-

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cerning economically important plants. This advantage has been utilised by Prof. Kraemer to the fullest extent; indeed, it might be considered by some to have been carried rather too far, for the section on the "Classification of Angiosperms" deals with medicinal plants only. The botanical portion of the work is well written and abundantly illustrated; it is characterised by the comparatively small amount of attention given to the lower forms of vegetable life, the algæ and fungi occupying only thirty-six pages, whereas in text-books of botany these two groups are usually treated in detail that is often considered unnecessary for the pharmacognosist.

Part ii., "Pharmacognosy," is subdivided into four chapters, dealing respectively with crude drugs, powdered drugs, reagents, and micro-analysis. As the first chapter comprises only 178 pages, and deals with a large number of crude drugs, it is evident that the space allotted to each can be but small. The descriptions of the drugs are accordingly very concise, and the methods by which those that are unorganised are produced have been perhaps unduly reduced, but the constituents have received careful and sufficient treatment. Thus the accounts of the production of such important drugs as aloes, catechu, guaiacum, rubber, &c., can convey to the mind of the student but an imperfect idea of the various steps in the processes and their effect upon the drug obtained. To these details a little more space might well be given without unduly increasing the size of the work. Credit, however, must be given to the author for including a large number of drugs of comparatively rare occurrence, and thus making this section of the work more complete than is usually the case with text-books designed for the use of the student. Chapter ii., dealing with powdered drugs, has also been much elaborated. In addition to those with organised structure, it includes a number of structureless drugs (aloes, myrrh, &c.), as well as a few definite chemical compounds. The key to their identification, based primarily upon the colour, is one of the most complete that has been published. The chapter is abundantly illustrated, and contains descriptions of the microscopical characters of so many drugs that it cannot fail to be of service to the experienced microscopist as well as to the student.

Chapter iv., "Micro-analysis," deals with the identification of the crystals found in drugs and their preparations by crystallographic methods, and the time has arrived when these methods must be adopted in the study of such crystals if any real progress in that direction is to be made. It is undeniable that at present the crystals observed in drugs are often very loosely described, and that their identification frequently rests on very insufficient grounds. This part also includes the description and illustration of the crystalline forms of a number of active constituents of drugs, such as brucine sulphate, codeine sulphate, cubebin, &c., and is to be regarded as suggestive (which is certainly the case) rather than as complete.

It will thus be seen that Kraemer's text-book is a valuable contribution to the literature of pharmacognosy. It shows how medicinal plants may be utilised in the study of botany; it deals with a large number of drugs; it gives instruction in their identification in the powdered state, and it suggests lines upon which microscopical investigation may be prosecuted. The author is to be congratulated on the success of his labours. HENRY G. GREENISH.

THE CHEMISTRY OF BLEACHING.

The Principles of Bleaching and Finishing of Cotton. By S. R. Trotman and E. L. Thorp. Pp. xii+347. (London: C. Griffin and Co., Ltd., 1911.) Price 16*s*. net.

THE book before us is an attempt to blend an account of the most recent advances in the processes of bleaching and finishing of cotton goods with an equally up-to-date account of the scientific principles which form the basis of these processes. Such an attempt is comparatively rare in connection with manufacturing processes, and on that account alone the book ought to be welcomed. But when, as we find, the attempt has been highly successful, the authors must be congratulated on having produced a work of great value to all concerned in this important industry.

The book opens with an account of the structure and composition of cotton fibre, the means of testing its strength, twist, &c., followed by an account of the carbohydrates, such as starch and the sugars which are of importance to the bleacher. A full account is given of the different kinds of water, and of the means of treating it so as to make it suitable for bleaching purposes. The importance of the quality of water supplied to the works is too often overlooked by the bleacher, who ought to know that good results in bleaching largely depend on the quality of water used, and that the pure white required for some goods cannot be obtained if certain waters are used.

One of the most interesting chapters in the book is that in which the influence of bacteria in bleaching is discussed. The authors show that cotton may be infected with bacteria at almost every stage of its manufacture, and the principal causes are the following:—

(1) Impure water for steeping.

(2) Incomplete removal of protoplasmic constituents during bleaching.

(3) Allowing goods to lie about in a damp condition, especially in warm weather.

(4) Insufficient cleanliness of plant or buildings.

(5) The use of inferior materials, *e.g.* low-grade starches and glues.

(6) The careless storing of finished goods.

The results of bacterial damage are frequently coloured spots, each spot being a colony of the organism. Sometimes the whole piece of cloth becomes infected, and has the appearance of having been dyed. A piece of lace examined by the authors left the finisher apparently perfect, but subsequently developed a pink colour.

"A microscopic examination showed the presence of numerous very fine hyphæ interlaced with the cotton fibres, and subsequent plate cultures upon a starch medium similar to the dress used for the lace proved the presence of a chromogenic mould, which was

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